

BALL TOSSING APPARATUS

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0001] Not applicable.

TECHNICAL FIELD OF THE INVENTION

[0002] The present invention relates generally to athletic equipment, and more particularly to an apparatus for tossing balls for batting practice.

BACKGROUND OF THE INVENTION

[0003] In developing the batting skills of either a baseball or softball player, it may be necessary for the player to improve the accuracy of the player's swing. Accurately swinging the bat may allow the player to both consistently contact the ball and skillfully place the ball in a desired location.

[0004] One type of apparatus used to develop hitting accuracy is a ball pitching device. Ball pitching devices are generally characterized by a declined ball chute that is joined to an upwardly-curved launch ramp. Balls are channeled down the declined ball chute, where they achieve a certain velocity. When the balls reach the end of the ball chute, their velocity propels them off the upwardly-curved launch ramp towards a batter. Due to the nature of their design, these devices may deliver the ball to the batter's hitting zone too quickly, with too much velocity, and at too flat a trajectory.

[0005] Another way of achieving a more accurate swing may be to practice hitting balls that are repeatedly tossed to the same sector of the player's hitting zone. The balls should be tossed at a slow velocity so the player can more easily develop and ingrain the motor skills associated with an accurate swing. One way of doing this is to toss balls from the ground up in a substantially vertical direction, such as the "soft toss" of a coach. By hitting balls delivered to the batter in this manner, the player may be able to develop a more accurate swing. Devices that toss balls in this manner may include a ball dropper, a ball deflector, and an electric member for modifying the deflection of the

ball deflector and thereby modifying the trajectory of the ball. The ball dropper drops the ball onto the ball deflector, where it is deflected towards the batter's hitting zone. The electric member may modify the deflection of the deflector to place the ball at a specified location within the batter's hitting zone. While such devices may deliver the ball to the batter from the ground up and with slow velocity, their moveable means are complicated and necessitate electrical motors and accordingly delivery of electricity, making them less mobile.

[0006] Thus, there remains a need in the art for an apparatus that can consistently and accurately deliver a ball to a batter from the ground up without the need for complicated electric devices and without the need for deflection modifying equipment. Consequently, embodiments of the present invention are directed to an apparatus that can deliver a ball to a batter in such a manner, thus helping to improve the accuracy of the batter's swing.

SUMMARY

[0007] Accordingly, there is provided herein embodiments of a ball tossing machine that may help improve the accuracy of a batter's swing. Such a ball tossing apparatus generally includes a ball dispenser and a pivoting ball deflector. In some embodiments, the ball dispenser dispenses one ball at a time to the pivoting ball deflector and the pivoting ball deflector deflects that ball towards the batter in a substantially vertical direction with a slow velocity. Additionally, the apparatus is easy to operate due to its uncomplicated design, and can be operated without motors or electricity. These and various other characteristics and advantages of the present invention will be readily apparent to those skilled in the art upon reading the following detailed description of the preferred embodiments of the invention and by referring to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] For a detailed description of the preferred embodiments of the invention, reference will now be made to the accompanying drawings, wherein:

Figure 1 is an isometric view of a ball tossing apparatus constructed in accordance with embodiments of the present invention;

Figure 2 is an isometric view of a pivoting ball deflector constructed in accordance with embodiments of the present invention; and

Figure 3 is an isometric view of a certain components of a pivoting ball deflector constructed in accordance with embodiments of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] In the description that follows, like parts may be marked throughout the specification and drawings with the same reference numerals, respectively. The drawing figures are not necessarily to scale. Certain features of the invention may be shown exaggerated in scale or in somewhat schematic form and some details of conventional elements may not be shown in the interest of clarity and conciseness.

[0010] Embodiments of the present invention relate to an apparatus for tossing a ball to a batter to improve the accuracy of the batter's swing. The present invention is susceptible to embodiments of different forms. There are shown in the drawings, and herein will be described in detail, specific embodiments of the present invention with the understanding that the present disclosure is to be considered an exemplification of the principles of the invention, and is not intended to limit the invention to that illustrated and described herein.

[0011] In particular, various embodiments of the present invention may provide a number of different apparatus for tossing a ball to a batter. Reference is made to the application of the concepts of the present invention to training baseball and softball hitters, but the use of the concepts of the present invention is not limited to baseball or softball, and can be used for any other application in which an athlete strikes a ball. It is to be fully recognized that the different teachings of the

embodiments discussed below may be employed separately or in any suitable combination to produce desired results.

[0012] Figure 1 shows a front view of embodiments of a ball tossing apparatus 100 including a ball dispenser 200 and a pivotable ball deflector 300. In some embodiments, as shown in Figure 1, ball tossing apparatus 100 is a freestanding device which drops a baseball 220 onto ball deflector 300. Ball deflector 300 is positioned such and its resilient top is angled such that when the ball 220 bounces off of the deflector, it is delivered at a desired velocity to a desired position in a hitter's (not shown) striking zone. Support structure 120 generally comprises base portion 130 and vertical portion 140. Base portion 130 preferably sits on a relatively flat surface to give support and stability to training station 100. Support structure 120 is preferably constructed from a lightweight, durable material suitable for long-term exposure to the elements. Structure 120 is also preferably primarily constructed to be easily disassembled into smaller components to further ease storage and movement of the assembly. The components of structure 120 are preferably bolted or pinned together for quick assembly or disassembly but may also be welded or otherwise permanently attached.

[0013] Base portion 130 may be of any suitable shape and arrangement. One preferred arrangement is shown in Figure 1 and includes legs 132. Vertical support 140 is preferably a tubular structure that can be adjusted in height so that training station 100 can accommodate various drop heights. A ball which is dropped from a greater height may bounce higher than a ball bounced from a lower height. Although the preferred embodiment of training station 100 is fully adjustable, it is understood that the training station may be constructed to be non-adjustable without departing from the scope of the present invention.

[0014] In operation, hitter releases a ball using release lever 240. Ball 220 then rolls down to opening 230 and onto ball deflector 300. For example, apparatus 100 and deflector 300 may be

positioned such that ball 220 falls from ball dispenser 200 onto ball deflector 300 and bounces up towards the hitters striking zone from the front, side, or back of the striking zone.

[0015] Referring now to Figure 2, there are shown embodiments of ball deflector 300. In these embodiments, there is shown frame 310, support member 320, pivoting deflector plate 330, deflecting material 340, and friction knob 350. Pivoting deflector plate 330 is attached to frame 310 and support member 320 by friction knob 350. The deflector plate may pivot around axis III to control the trajectory of the deflection of the ball (not shown). Friction knob 350 may be loosened to allow the pivoting of deflector plate 330 and tightened when deflector plate 330 is in the desired position and to prevent the pivoting of deflector plate 330. Deflector plate 330 is covered by deflector material 340. Deflector material 340 may be, for example, an elastic material such as tennis racquet string which is threaded onto deflector plate 330 in much the same way as a tennis racquet. Alternatively, by way of example only, deflector material may be any suitable elastic material such as elastic string or an elastic insert (*e.g.*, rubber) or even a material which entirely covers deflector plate 330 such as a cloth material made from natural (*e.g.*, canvas) or synthetic (*e.g.*, nylon) fibers or a blend of both. Additionally, in some embodiments, it may be desirable to include springs around the edge of deflector material 340 to assist in deflecting the ball.

[0016] The embodiments set forth herein are merely illustrative and do not limit the scope of the invention or the details therein. It will be appreciated that many other modifications and improvements to the disclosure herein may be made without departing from the scope of the invention or the inventive concepts herein disclosed. Because many varying and different embodiments may be made within the scope of the inventive concept herein taught, including equivalent structures or materials hereafter thought of, and because many modifications may be made in the embodiments herein detailed in accordance with the descriptive requirements of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in a limiting sense.